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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,332	03/01/2002	Vladimir Nikitin	SJO92000065US1	3077

7590 09/30/2003
Brian C. Kunzler
10 West 100 South
Salt Lake City, UT 84101

EXAMINER

DAVIS, DAVID DONALD

ART UNIT PAPER NUMBER

2652

DATE MAILED: 09/30/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/087,332

Applicant(s)

NIKITIN ET AL.

Examiner

David D. Davis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. Receipt is acknowledged of the Information Disclosure Statement (IDS) received March 1, 2002.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 6, 7 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeura et al (US 4,807,073). As per claims 1 and 23-25, Takeura et al shows in figure 5 a magnetic head including an electrical contact pad 3; a substrate 14 on which the magnetic head is formed; and a material 13 selected to have a low dielectric constant interposed between the pad and the substrate 14. As per claim 2, the low dielectric material 13 of Takeura et al is configured to decrease the parasitic capacitance of the magnetic head.

As per claim 6, which is directed to a magnetic head, per se, the method limitations appearing in claim 6 have only been accorded weight to the extent that it affects the structure of the completed magnetic head. Note that "[d]etermination of patentability in 'product-by-process'

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claims is based on product itself, even though such claims are limited and defined by process [i.e., "the low dielectric material includes hard-bake photo resist"], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different process", *In re Thorpe, et al.*, 227 USPQ 964 (CAFC 1985).

Furthermore, note that a "[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., "the low dielectric material includes hard-bake photo resist"] is still product claim; it is patentability of product claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations", *In re Hirao and Sato*, 190 USPQ 685 (CCPA 1976).

As per claim 7 and 14, Takeura et al shows in figure 5 that the low dielectric material 13 & 2, which are either alumina or SiO₂ (see column 10, lines 52-55), provides a platform for the electrical contact pad 3.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 3-5, 8-13, and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeura et al (US 4,807,073) in view of Jursich et al (US 5,048,175). Takeura et al discloses the claimed invention. See description supra. However, Takeura et al is silent as to electrical conductive (e.g. copper, Cu) studs formed through dielectric material. Takeura et al is also silent as to the specific thickness of the electrical contact pads and the dielectric material, as well as the dielectric constant, with the thickness being between 1 and 100 μ m and the constant being less than 9. Takeura et al is additionally silent as to the magnetic head being a spin valve or giant magnetoresistive (GMR) head.

Jursich et al shows in figure 1, for example, electrical conductive, such as copper (see column 5, lines 44-45) studs formed through dielectric material.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the magnetic head of Takeura et al with electrical conductive (e.g. Cu) studs formed through dielectric material as taught by Jurisch et al.

The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to provide a magnetic head with electrical conductive (e.g. Cu) studs formed through dielectric material so as to short out stray capacitance. See column 5, lines 6-19 of Jurisch et al.

It also would have been obvious to a person having ordinary skill in the art at the time the invention was made to specify the thickness and constant of the dielectric material and the

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electrical contact pads of Takeura et al with thickness being between 1 and 100 μ m and the constant being less than 9. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to specify the thickness of dielectric material and electrical contact pads with the thickness being between 1 and 100 μ m and the constant being less than 9, which is well within the purview of a skilled artisan and absent an unobvious result, so as to provide head that corresponds with the magnetization reversal interval recorded in the recording medium. See column 3, lines 39-47 of Takeura et al.

It also would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the magnetic head of Takeura et al with a GMR sensor as taught in the art. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to provide a magnetic head with a GMR sensor as to increase the reproduction density of the magnetic head.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Davis whose telephone number is (703) 308-1503. The examiner can normally be reached on Mon., Tues., Thurs. and Fri. between 7:30-6:00. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

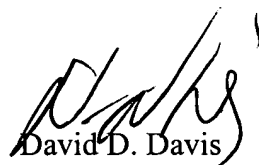
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900. Any other

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inquiry should be directed to the customer service center whose telephone number is (703) 306-0377.



David D. Davis
Primary Examiner
Art Unit 2652

ddd

September 22, 2003